

from a kiss! I have spent many happy hours on some of the remoter rivers of Assam watching birds with the *Birds of Burma* open beside me. Unfortunately it was not mine and I returned it reluctantly to its trustful owner, having overcome a great temptation.

Smythies' has written me that his book may be republished. I sincerely hope this is true.

KHOWANG TEA ESTATE,
MORAN DISTRICT,
UPPER ASSAM.

F. KINGDON-WARD.

16 September 1945.

16.—ON THE BREEDING OF THE TIGER SHARK
(*GALEOCERDO TIGRINUS* MULLER & HENLE).

The systematics of the Tiger Shark *Galeocerdo tigrinus* was included by me in a previous paper published in this *Journal* (Vol. xliv, No. 1, 1943). The paper also contained an account of its feeding and breeding habits, based on the observations from such stages of pregnancy as were then available to me. Subsequently I conducted an autopsy on a female with young in her uteri, almost ready for expulsion. The condition observed is described below:—

Parturition stage:—

Parent female: total length 12' 11"; app. wt. 1,500 lbs.; date 4-5-43.

Each uterus had 13 foetuses, 7 males and 19 females. They were enclosed in water-filled sacs and floated freely in them, there being no attachment to the uterine wall. The foetuses ranged from 2' 3" to 2' 5½" in total length. Their yoke-sacs and umbilical cords were extremely reduced in size and length and showed conspicuous structural degeneration. There was no longer any yolk in the yolk-sacs, and their walls were extremely shrivelled up without any trace of blood capillaries. The reduced umbilical cords measured from 2" to 4". The umbilical vessels had atrophied and fibrosed. The umbilical sheaths showed considerable rugosity and fibrosis near the points of attachments, suggesting that they would shortly be cast off. A dissection of the foetus revealed the presence of a large internal yolk-sac containing plenty of yellow yolk. All these features made it evident that parturition was near at hand. The mucous membrane of each of the uterine compartments (horizontally disposed) was plain and smooth but fairly vascular.

These observations clearly verify the inferences drawn by me in my aforesaid paper that,

1. The young of this species measure, at birth, about 2' 6" in length, and

2. That *G. tigrinus* is a non-placental form. The large quantity of yolk in the sac serves as nourishment for the embryo throughout its intra-uterine life, no placenta being at all formed.

DEPARTMENT OF FISHERIES,
BOMBAY,
30th October 1945.

P. N. SARANGDHAR, M.Sc., Ph.D.

17.—A NOTE ON THE CONSERVATION OF OUR INLAND FISHERIES BY LEGISLATION.

An enquiry was made by Francis Day¹ in 1868-70 into Fresh water Fisheries of India and Burma showed that an indiscriminate and wholesale slaughter of fish life took place annually. Dr. Day pointed out that unless remedial measures were adopted this indiscriminate destruction of spawners and spawn would result in great diminution in the fish supply of India.

Legislation.—It was, however, in 1897 that protection to Fisheries in India was afforded by legislation with the enactment of Indian Fisheries Act IV. This Act, as Comber² (1906) pointed out was very far from being what all competent experts would have liked to see it. It prohibited the use of poisons and dynamite in rivers, but practically left everything else to local administrations to whom power was given to frame such minor rules, under the Act, as might seem necessary for the protection of fish in waters under their jurisdiction—by prohibiting or regulating (a) the erection and use of fixed engines, (b) the construction of weirs, and (c) the dimension and kind of nets to be used, and the modes of using them. No machinery was introduced for the proper working of the Act.

Provincial legislation.—Inquiries recently made show that in some provinces the Indian Fisheries Act has not been adopted at all, in others it is in force but no subsidiary rules have been drawn up. In Bengal, owing to Permanent Settlement, the fisheries position is very complicated. Some protection to fisheries in reserved and protected forests is afforded under the Forest Act. In respect of private waters, Private Fisheries Protection Act, II of 1899, passed by the Bengal Legislature penalises poaching in such waters. In Bombay, fishing in the rivers is entirely free and no rules have been framed for conservation of inland fisheries. The same applies to almost all other provinces in India. It is only in the Punjab that the fisheries are protected by Provincial legislation. The Punjab Fisheries Act II enacted in 1914. Its provisions are applicable to all the rivers, canals and other public waters. The Act and the Rules notified thereunder prohibit (1) all kind of fishing in rivers

¹ Day, F. (1871)—'Report on the Fish and Fisheries of Fresh Waters of India and Burma. Simla. pp. 1-49.

² Comber, N. (1906)—'Protective Legislation for Indian Fisheries'. Journ. Bomb. Nat. Hist. Soc. XVII, pp. 637-644.